



April 4, 2017

Maria Bebenek
Manager, Clean Water Program
DEP, SCRO
909 Elmerton Avenue
Harrisburg, Pa 17110

RE: **March 2017** Monthly Report, Site-Specific Study Plan

Dear Ms. Bebenek;

In accordance with Section 3.e of the August 21, 2015 Consent Order and Agreement, the following is the March 2017 monthly report for the Site-Specific Methylmercury Water Quality Criterion Stream Study Plan (the Plan).

Activities Accomplished:

- The NPDES-01 and NPDES-02 samples were collected on March 7, 2017 and sent to Geochemical Testing for analysis.
- Stream water quality samples were collected on March 7, 2017. Samples were collected at stream stations RR-01 (identified in figure 3-1 of the Plan), Rambo-Down (located in the mixed zone below NPDES-01), EC-02 (identified in figure 3-2 of Plan) and Ebaughs-Down (located in the mixed zone below NPDES-02). Stream samples RR-01, Rambo-Down, EC-02 and Ebaughs-Down were sent to Brooks Applied Laboratory for analysis.

Results:

- Attached are the analytical results as reported by Geochemical Testing from the March 7, 2017 samples for NPDES-01 and NPDES-02.
- Attached are the analytical results as reported by Brooks Applied Laboratory for stream samples collected on February 14, 2017. Included are results from RR-01, Rambo-Down, EC-02 and Ebaughs-Down.
- The February 14, 2017 equipment blank sample had a trace detection of 0.23 ng/l for total Hg which is between the Method Detection Limit of 0.10 ng/l and the Method Reporting Limit of 0.40 ng/l. Analysis performed by Brooks Applied Laboratory.

- Stream discharge measurements were taken on March 7, 2017 in the area where stream samples are collected at RR-01 and EC-02. The following are the results.

- RR-01:

Measurement 1: 2.10 ft³/sec

Measurement 2: 2.15 ft³/sec

Average: 2.13 ft³/sec

- EC-02:

~~Measurement 1: 9.17 ft³/sec~~ (Error made during field measurement)

Measurement 2: 3.00 ft³/sec

~~Measurement 3: 9.39 ft³/sec~~ (Error made during field measurement)

Measurement 4: 3.01 ft³/sec

Measurement 5: 2.70 ft³/sec

Average*: 2.90 ft³/sec

*Five measurements were taken but a review of the data found errors were made in the field measurements for the first and third runs. The first and third runs were not used in calculating the average discharge.

Feel free to contact me if you have any questions or comments on the information provided in this monthly report.

Respectfully,



Richard A. Hazenstab, P.G.
Coordinator
Operations and Environmental Programs

cc: D. Vollero; D. Jasitt; J. Beuschlein; J. Collins

Attached: Brooks Applied Laboratory analysis for stream samples, February 14, 2017
Geochemical Testing analysis for NPDES-01, March 7, 2017
Geochemical Testing analysis for NPDES-02, March 7, 2017
Stream Discharge, March 7, 2017
Field Data, March 7, 2017



Sample Information

Sample	Lab ID	Report Matrix	Type	Sampled	Received
RR-01	1707030-01	Water	Sample	02/14/2017	02/15/2017
RR-01	1707030-02	Water	Sample	02/14/2017	02/15/2017
Rambo Down	1707030-03	Water	Sample	02/14/2017	02/15/2017
Rambo Down	1707030-04	Water	Sample	02/14/2017	02/15/2017
EC-02	1707030-05	Water	Sample	02/14/2017	02/15/2017
EC-02	1707030-06	Water	Sample	02/14/2017	02/15/2017
Ebaughs Down	1707030-07	Water	Sample	02/14/2017	02/15/2017
Ebaughs Down	1707030-08	Water	Sample	02/14/2017	02/15/2017
Equipment Blank	1707030-09	Water	Equip. Blank	02/14/2017	02/15/2017
Equipment Blank	1707030-10	Water	Equip. Blank	02/14/2017	02/15/2017

Batch Summary

Analyte	Lab Matrix	Method	Prepared	Analyzed	Batch	Sequence
Hg	Water	EPA 1631 E	02/17/2017	02/20/2017	B170398	1700213
Hg	Water	EPA 1631 E	02/17/2017	02/22/2017	B170398	1700223
MeHg	Water	EPA 1630	02/21/2017	02/22/2017	B170397	1700235



Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
Ebaughs Down										
1707030-07	Hg	Water	TR	178		0.10	0.40	ng/L	B170398	1700213
1707030-08	MeHg	Water	D	≤ 0.020	U	0.020	0.049	ng/L	B170397	1700235
EC-02										
1707030-05	Hg	Water	TR	0.93		0.10	0.40	ng/L	B170398	1700223
1707030-06	MeHg	Water	D	≤ 0.020	U	0.020	0.049	ng/L	B170397	1700235
Equipment Blank										
1707030-09	Hg	Water	TR	0.23	J	0.10	0.40	ng/L	B170398	1700213
1707030-10	MeHg	Water	D	≤ 0.020	U	0.020	0.049	ng/L	B170397	1700235
Rambo Down										
1707030-03	Hg	Water	TR	195		2.53	10.1	ng/L	B170398	1700223
1707030-04	MeHg	Water	D	0.046	J	0.020	0.050	ng/L	B170397	1700235
RR-01										
1707030-01	Hg	Water	TR	0.91		0.10	0.40	ng/L	B170398	1700223
1707030-02	MeHg	Water	D	0.042	J	0.020	0.049	ng/L	B170397	1700235

Laboratory Results

Geochemical Testing

Date: 14-Mar-17

CLIENT:	YORK COUNTY SWRA	Client Sample ID:	NPDES-1
Lab Order:	G1703476	Sampled By:	York SWA
Project:	York 600 M	Collection Date:	3/7/2017 11:30:00 AM
Lab ID:	G1703476-001	Received Date:	3/8/2017 1:57:28 PM
Matrix:	AQUEOUS		

Analyses	Result	QL	Q	Units	DF	Date Prepared	Date Analyzed
PH BY SM 4500 H+B		Analyst: AM					SM 4500-H+ B
Lab pH	7.96		H	S.U.	1		03/08/17 4:35 PM
TOTAL METALS		Analyst: JEK				EPA 245.7	EPA 245.7
Mercury	294	20.0		ng/L	10	03/10/17 10:00 AM	03/13/17 1:15 PM
INORGANIC METALS		Analyst: RLR				EPA 200.2	EPA 200.8
Antimony	< 2.0	2.0		µg/L	1	03/09/17 10:45 AM	03/10/17 8:48 AM
Cadmium	< 0.2	0.2		µg/L	1	03/09/17 10:45 AM	03/10/17 8:48 AM
Copper	< 4.0	4.0		µg/L	1	03/09/17 10:45 AM	03/10/17 8:48 AM
Lead	< 1.0	1.0		µg/L	1	03/09/17 10:45 AM	03/10/17 8:48 AM
Silver	< 0.4	0.4		µg/L	1	03/09/17 10:45 AM	03/10/17 8:48 AM
VOLATILE ORGANIC COMPOUNDS		Analyst: SJM					EPA 624
1,1,1-Trichloroethane	< 0.5	0.5		µg/L	1		03/09/17 1:39 AM
1,1-Dichloroethane	< 0.5	0.5		µg/L	1		03/09/17 1:39 AM
1,1-Dichloroethene	< 0.5	0.5		µg/L	1		03/09/17 1:39 AM
Chloroethane	< 0.5	0.5		µg/L	1		03/09/17 1:39 AM
cis-1,2-Dichloroethene	< 0.5	0.5		µg/L	1		03/09/17 1:39 AM
Dichlorodifluoromethane	< 0.5	0.5		µg/L	1		03/09/17 1:39 AM
Methylene Chloride	< 0.5	0.5		µg/L	1		03/09/17 1:39 AM
Tetrachloroethene	< 0.5	0.5		µg/L	1		03/09/17 1:39 AM
Tetrahydrofuran	< 1.0	1.0		µg/L	1		03/09/17 1:39 AM
Trichloroethene	< 0.5	0.5		µg/L	1		03/09/17 1:39 AM
Trichlorofluoromethane	< 0.5	0.5		µg/L	1		03/09/17 1:39 AM
Vinyl Chloride	< 0.5	0.5		µg/L	1		03/09/17 1:39 AM
Surr: 1,2-Dichloroethane-d4	93.4	80-120		%REC	1		03/09/17 1:39 AM
Surr: 4-Bromofluorobenzene	98.0	80-120		%REC	1		03/09/17 1:39 AM
Surr: Toluene-d8	98.0	80-120		%REC	1		03/09/17 1:39 AM



I.D. 56-00306 PA DEP

Laboratory Results

Geochemical Testing

Date: 14-Mar-17

CLIENT:	YORK COUNTY SWRA	Client Sample ID:	NPDES-2
Lab Order:	G1703477	Sampled By:	York SWA
Project:	York 600 M	Collection Date:	3/7/2017 12:15:00 PM
Lab ID:	G1703477-001	Received Date:	3/8/2017 2:03:03 PM
Matrix:	AQUEOUS		

Analyses	Result	QL	Q	Units	DF	Date Prepared	Date Analyzed
PH BY SM 4500 H+B		Analyst: AM			SM 4500-H+ B		
Lab pH	7.65		H	S.U.	1		03/08/17 4:37 PM
TOTAL METALS		Analyst: JEK			EPA 245.7		
Mercury	149	4.0		ng/L	2	03/10/17 10:00 AM	03/13/17 1:18 PM
INORGANIC METALS		Analyst: RLR			EPA 200.2		
Antimony	< 2.0	2.0		µg/L	1	03/09/17 10:45 AM	03/10/17 8:50 AM
Cadmium	< 0.2	0.2		µg/L	1	03/09/17 10:45 AM	03/10/17 8:50 AM
Copper	< 4.0	4.0		µg/L	1	03/09/17 10:45 AM	03/10/17 8:50 AM
Lead	< 1.0	1.0		µg/L	1	03/09/17 10:45 AM	03/10/17 8:50 AM
Silver	< 0.4	0.4		µg/L	1	03/09/17 10:45 AM	03/10/17 8:50 AM
VOLATILE ORGANIC COMPOUNDS		Analyst: SJM			EPA 624		
1,1,1-Trichloroethane	< 0.5	0.5		µg/L	1		03/09/17 2:26 AM
1,1-Dichloroethane	< 0.5	0.5		µg/L	1		03/09/17 2:26 AM
1,1-Dichloroethene	< 0.5	0.5		µg/L	1		03/09/17 2:26 AM
Chloroethane	< 0.5	0.5		µg/L	1		03/09/17 2:26 AM
cis-1,2-Dichloroethene	< 0.5	0.5		µg/L	1		03/09/17 2:26 AM
Dichlorodifluoromethane	< 0.5	0.5		µg/L	1		03/09/17 2:26 AM
Methylene Chloride	< 0.5	0.5		µg/L	1		03/09/17 2:26 AM
Tetrachloroethene	< 0.5	0.5		µg/L	1		03/09/17 2:26 AM
Tetrahydrofuran	< 1.0	1.0		µg/L	1		03/09/17 2:26 AM
Trichloroethene	< 0.5	0.5		µg/L	1		03/09/17 2:26 AM
Trichlorofluoromethane	< 0.5	0.5		µg/L	1		03/09/17 2:26 AM
Vinyl Chloride	< 0.5	0.5		µg/L	1		03/09/17 2:26 AM
Surr: 1,2-Dichloroethane-d4	95.2	80-120		%REC	1		03/09/17 2:26 AM
Surr: 4-Bromofluorobenzene	97.7	80-120		%REC	1		03/09/17 2:26 AM
Surr: Toluene-d8	97.8	80-120		%REC	1		03/09/17 2:26 AM





STREAM DISCHARGE MEASUREMENT
YORK COUNTY SOLID WASTE AND REFUSE AUTHORITY

Study Area: RR-01

Transect: _____

Date: 3/7/2017

Operator: Bill Jones

Weather (Circle)

Air Temp (°F): 45

Current: Storm (heavy rain) Rain (steady rain) Showers (intermittent) Partly Cloudy Clear/Sunny

Past 24 Hours: Storm (heavy rain) Rain (steady rain) Showers (intermittent) Partly Cloudy Clear/Sunny

SITE DESCRIPTION

Yes	No
✓	✓
<input checked="" type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input checked="" type="checkbox"/>
<input checked="" type="checkbox"/> & <u>5%</u>	<input type="checkbox"/>

NOTES:

Approx. stream width

18 1/2

*No subsection should contain >10% of total discharge, ideal <5%

Approx. number of verticals

20

*10-25 verticals recommended but adjust to conditions and objectives

(includes edges)

OTT MF Pro

Measurement 1

Filename	<u>RR MAR 2</u>
Start time	<u>11:00</u>
End time	<u>11:20</u>
Total stream discharge (Q)	<u>2.102</u>

IN CASE OF EMERGENCY:

- 1) Administer first aid if necessary
- 2) Call 911 and state your location in the following order of preference:
 - a) With a GPS-enabled phone if available
 - b) Use nearest road intersections as displayed on maps
 - c) Coordinates and coordinate system of nearest 'T' point as identified on the maps
 - d) With coordinates off of GPS

Measurement 2

Filename	<u>RR MAR 2</u>
Start time	<u>1125</u>
End time	<u>1145</u>
Total stream discharge (Q)	<u>2.150</u>

Measurement 3

Filename	_____
Start time	_____
End time	_____
Total stream discharge (Q)	_____

Notes:



STREAM DISCHARGE MEASUREMENT
YORK COUNTY SOLID WASTE AND REFUSE AUTHORITY

Study Area: EC-02
Date: 3/7/2017

Transect: _____
Operator: Bill Jones / Richard Hezenstab

Weather (Circle)

Air Temp (°F): 66

Current: Storm (heavy rain) Rain (steady rain) Showers (intermittent) Partly Cloudy Clear/Sunny

Past 24 Hours: Storm (heavy rain) Rain (steady rain) Showers (intermittent) Partly Cloudy Clear/Sunny

SITE DESCRIPTION

Yes	No
✓	✓
<input checked="" type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input checked="" type="checkbox"/>
<input type="checkbox"/>	<input checked="" type="checkbox"/>

NOTES:

Straight reach
Streambed uniform
Flow uniform
Reduced flow near edges
Large woody debris present
Aquatic vegetation present

Approx. stream width

18

*No subsection should contain >10% of total discharge, ideal <5%

Approx. number of verticals

19

*10-25 verticals recommended but adjust to conditions and objectives

includes edges

OTT MF Pro

Measurement 1

Filename	<u>EC MAR - 1</u>
Start time	<u>1210</u>
End time	<u>1237</u>
Total stream discharge (Q)	<u>9.165</u>

Field Error

IN CASE OF EMERGENCY:

- 1) Administer first aid if necessary
- 2) Call 911 and state your location in the following order of preference:
 - a) With a GPS-enabled phone if available
 - b) Use nearest road intersections as displayed on maps
 - c) Coordinates and coordinate system of nearest 'T' point as identified on the maps
 - d) With coordinates off of GPS

Measurement 2

Filename	<u>EC. MAR - 2</u>
Start time	<u>1240</u>
End time	<u>1300</u>
Total stream discharge (Q)	<u>2.941</u>

Measurement 3

Filename	<u>EC - MAR - 3</u>
Start time	<u>1305</u>
End time	<u>1330</u>
Total stream discharge (Q)	<u>9.386</u>

Field Error

Notes:

Measurement #4

*Filename EC - MAR - 4
Start Time 1335
End Time 1352
Total Stream Discharge 3.015*

Measurement #5

*EC - MAR - 5
1355
1415
2.695*



**SURFACE WATER SAMPLE CHARACTERIZATION
YORK COUNTY SOLID WASTE AND REFUSE AUTHORITY**

SAMPLE IDENTIFICATION: <i>RR-01</i>	NORTHING:	EASTING:
INVESTIGATORS: <i>F. Kovacs / T. Godfrey</i>	DATE: <i>3/7/17</i> TIME: <i>1015</i>	WATER DEPTH: <i>1.5</i>
FORM COMPLETED BY: <i>F. Kovacs</i>		

WEATHER CONDITIONS	Now	Past 24 hours	Has there been a heavy rain in the last 7 days? <input checked="" type="checkbox"/> Yes / <input type="checkbox"/> No Air Temperature <i>40</i> °F Other:	
	<input type="checkbox"/>	<input type="checkbox"/>		storm
	<input type="checkbox"/>	<input type="checkbox"/>		rain
	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		showers
	<input type="checkbox"/>	<input type="checkbox"/>		partly cloudy
	<input type="checkbox"/>	<input type="checkbox"/>	clear/sunny	

WATER QUALITY PARAMETERS

Parameter	Measurement	Surface Water Characteristics:
Temperature (°C):	<i>7.6</i>	
DO (mg/L):		Color: <i>clear</i>
DO (% Saturation):		
pH:	<i>7.75</i>	Odcr: <i>NA</i>
Conductivity (µS/cm):	<i>163</i>	
ORP (mV):		Other: <i>NA</i>

SURFACE WATER ANALYSES

Parameter	Unfiltered	Filtered
Total Mercury (THg)	<input checked="" type="checkbox"/>	
Methylmercury (MeHg)		<input checked="" type="checkbox"/>
Sample Depth (feet):		

QA/QC:

Duplicate Sample Station? (Y/N) *(N)*

MS/MSD Sample Station? (Y/N) *(N)*

NOTES: *TG-sampler*



**SURFACE WATER SAMPLE CHARACTERIZATION
YORK COUNTY SOLID WASTE AND REFUSE AUTHORITY**

SAMPLE IDENTIFICATION: <i>Rambo Downs</i>	NORTHING:	EASTING:
INVESTIGATORS: <i>F. Kovacs / T. Godfrey</i>	DATE: <i>3/7/17</i> TIME: <i>1115</i>	WATER DEPTH: <i>6"</i>
FORM COMPLETED BY: <i>F. Kovacs</i>		

WEATHER CONDITIONS	Now	Past 24 hours	Has there been a heavy rain in the last 7 days? <input checked="" type="radio"/> Yes / <input type="radio"/> No Air Temperature <i>40</i> °F Other:	
	<input type="checkbox"/>	<input type="checkbox"/>		storm
	<input type="checkbox"/>	<input type="checkbox"/>		rain
	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		showers
	<input type="checkbox"/>	<input type="checkbox"/>		partly cloudy
	<input type="checkbox"/>	<input type="checkbox"/>	clear/sunny	

WATER QUALITY PARAMETERS

Parameter	Measurement	Surface Water Characteristics:
Temperature (°C)	<i>9.5°</i>	
DO (mg/L):		Color: <i>Clear</i>
DO (% Saturation):		
pH:	<i>7.46</i>	Odor: <i>NA</i>
Conductivity (µS/cm):	<i>259</i>	
ORP (mV):		Other: <i>NA</i>

SURFACE WATER ANALYSES			QA/QC:
Parameter	Unfiltered	Filtered	Duplicate Sample Station? (Y <input checked="" type="radio"/> N)
Total Mercury (THg)	<input checked="" type="checkbox"/>		
Methylmercury (MeHg)		<input checked="" type="checkbox"/>	MS/MSD Sample Station? (Y <input checked="" type="radio"/> N)
Sample Depth (feet):			

NOTES: *TG - Sampler*



**SURFACE WATER SAMPLE CHARACTERIZATION
YORK COUNTY SOLID WASTE AND REFUSE AUTHORITY**

SAMPLE IDENTIFICATION: <i>Ebaughs Down</i>	NORTHING:	EASTING:
INVESTIGATORS: <i>F Kovacs / T. Godfrey</i>	DATE: <i>3/7/17</i>	WATER DEPTH: <i>6"</i>
FORM COMPLETED BY: <i>F Kovacs</i>	TIME: <i>1300</i>	

WEATHER CONDITIONS	Now	Past 24 hours	Has there been a heavy rain in the last 7 days? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No Air Temperature <i>40</i> °F <i>45°</i> Other:	
	<input type="checkbox"/>	<input type="checkbox"/>		storm
	<input type="checkbox"/>	<input type="checkbox"/>		rain
	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		showers
	<input type="checkbox"/>	<input checked="" type="checkbox"/>		partly cloudy
	<input type="checkbox"/>	<input type="checkbox"/>	clear/sunny	

WATER QUALITY PARAMETERS

Parameter	Measurement	Surface Water Characteristics:
Temperature (°C):	<i>11.7</i>	
DO (mg/L):		Color: <i>clear</i>
DO (% Saturation):		
pH:	<i>7.75</i>	Odor: <i>NA</i>
Conductivity (µS/cm):	<i>190</i>	
ORP (mV):		Other: <i>NA</i>

SURFACE WATER ANALYSES

Parameter	Unfiltered	Filtered
Total Mercury (THg)	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Methylmercury (MeHg)	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Sample Depth (feet):		

QA/QC:

Duplicate Sample Station? (Y/N) *(N)*

MS/MSD Sample Station? (Y/N) *(N)*

NOTES: *TG - Sampler*